

Welcome to STN International! Enter x:x

LOGINID:ssspta1653hxp

PASSWORD:

TERMINAL (ENTER 1, 2, 3, OR ?):2

* * * * * * * * * Welcome to STN International * * * * * * * * *

NEWS 1 Web Page URLs for STN Seminar Schedule - N. America
NEWS 2 Jan 25 BLAST(R) searching in REGISTRY available in STN on the Web
NEWS 3 Jan 29 FSTA has been reloaded and moves to weekly updates
NEWS 4 Feb 01 DKILIT now produced by FIZ Karlsruhe and has a new update frequency
NEWS 5 Feb 19 Access via Tymnet and SprintNet Eliminated Effective 3/31/02
NEWS 6 Mar 08 Gene Names now available in BIOSIS
NEWS 7 Mar 22 TOXLIT no longer available
NEWS 8 Mar 22 TRCTHERMO no longer available
NEWS 9 Mar 28 US Provisional Priorities searched with P in CA/CAplus and USPATFULL
NEWS 10 Mar 28 LIPINSKI/CALC added for property searching in REGISTRY
NEWS 11 Apr 02 PAPERCHEM no longer available on STN. Use PAPERCHEM2 instead.
NEWS 12 Apr 08 "Ask CAS" for self-help around the clock
NEWS 13 Apr 09 BEILSTEIN: Reload and Implementation of a New Subject Area
NEWS 14 Apr 09 ZDB will be removed from STN
NEWS 15 Apr 19 US Patent Applications available in IFICDB, IFIPAT, and IFIUDB
NEWS 16 Apr 22 Records from IP.com available in CAPLUS, HCAPLUS, and ZCAPLUS
NEWS 17 Apr 22 BIOSIS Gene Names now available in TOXCENTER
NEWS 18 Apr 22 Federal Research in Progress (FEDRIP) now available
NEWS 19 Jun 03 New e-mail delivery for search results now available
NEWS 20 Jun 10 MEDLINE Reload
NEWS 21 Jun 10 PCTFULL has been reloaded
NEWS 22 Jul 02 FOREGE no longer contains STANDARDS file segment

NEWS EXPRESS February 1 CURRENT WINDOWS VERSION IS V6.0d,
CURRENT MACINTOSH VERSION IS V6.0a(ENG) AND V6.0Ja(JP),
AND CURRENT DISCOVER FILE IS DATED 05 FEBRUARY 2002
NEWS HOURS STN Operating Hours Plus Help Desk Availability
NEWS INTER General Internet Information
NEWS LOGIN Welcome Banner and News Items
NEWS PHONE Direct Dial and Telecommunication Network Access to STN
NEWS WWW CAS World Wide Web Site (general information)

Enter NEWS followed by the item number or name to see news on that specific topic.

All use of STN is subject to the provisions of the STN Customer agreement. Please note that this agreement limits use to scientific research. Use for software development or design or implementation of commercial gateways or other similar uses is prohibited and may

result in loss of user privileges and other penalties.

* * * * * * * * * * * STN Columbus * * * * * * * * * * *

FILE 'HOME' ENTERED AT 18:34:53 ON 15 JUL 2002

=> file medline, uspatful, dgene, embase, wpids, biosis

| COST IN U.S. DOLLARS | SINCE FILE ENTRY | TOTAL SESSION |
|----------------------|------------------|---------------|
| FULL ESTIMATED COST | 0.21 | 0.21 |

FILE 'MEDLINE' ENTERED AT 18:35:16 ON 15 JUL 2002

FILE 'USPATFULL' ENTERED AT 18:35:16 ON 15 JUL 2002
CA INDEXING COPYRIGHT (C) 2002 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'DGENE' ENTERED AT 18:35:16 ON 15 JUL 2002
COPYRIGHT (C) 2002 THOMSON DERWENT

FILE 'EMBASE' ENTERED AT 18:35:16 ON 15 JUL 2002
COPYRIGHT (C) 2002 Elsevier Science B.V. All rights reserved.

FILE 'WPIDS' ENTERED AT 18:35:16 ON 15 JUL 2002
COPYRIGHT (C) 2002 THOMSON DERWENT

FILE 'BIOSIS' ENTERED AT 18:35:16 ON 15 JUL 2002
COPYRIGHT (C) 2002 BIOLOGICAL ABSTRACTS INC. (R)

=> s yeast and ferment xylose

L1 81 YEAST AND FERMENT XYLOSE

=> s yeast and ferment glucose

L2 99 YEAST AND FERMENT GLUCOSE

=> s saccharomyces

L3 190017 SACCHAROMYCES

=> s l1 and l2

L4 10 L1 AND L2

=> s l1 and rDNA

L5 3 L1 AND RDNA

=> d 15 ti abs ibib tot

L5 ANSWER 1 OF 3 USPATFULL

TI Aureobasidium pullulans xylanase, gene and signal sequence
AB A xylanase from Aureobasidium pullulans having a high specific activity
is provided as well as a signal protein for controlling excretion into
cell culture medium of proteins to which it is attached. DNA encoding
these proteins is also provided.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 97:1346 USPATFULL

TITLE: *Aureobasidium pullulans* xylanase, gene and signal sequence
 INVENTOR(S): Lin-Liang, Li, Athens, GA, United States
 PATENT ASSIGNEE(S): Ljungdahl, Lars G., Athens, GA, United States
 University of Georgia Research Foundation, Inc.,
 Athens, GA, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|-----------------------|--|------|--------------|
| PATENT INFORMATION: | US 5591619 | | 19970107 |
| APPLICATION INFO.: | US 1994-315695 | | 19940930 (8) |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | Granted | | |
| PRIMARY EXAMINER: | Wax, Robert A. | | |
| ASSISTANT EXAMINER: | Grimes, Eric | | |
| LEGAL REPRESENTATIVE: | Greenlee, Winner and Sullivan | | |
| NUMBER OF CLAIMS: | 16 | | |
| EXEMPLARY CLAIM: | 1 | | |
| NUMBER OF DRAWINGS: | 4 Drawing Figure(s); 4 Drawing Page(s) | | |
| LINE COUNT: | 2284 | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L5 ANSWER 2 OF 3 DGENE (C) 2002 THOMSON DERWENT
 TI **Yeast** which ferments xylose to methanol - comprising xylitol reductase, xylitol dehydrogenase and xylulokinase genes integrated at each of its multiple reiterated ribosomal DNA sites
 AN AAV12824 DNA DGENE
 AB This sequence represents an amplification primer for the **yeast** 5S rDNA sequence. The amplified sequence can be used in the **yeast** of the invention, which ferments xylose to ethanol. The **yeast** comprises: (a) xylose reductase (XR), xylitol dehydrogenase (XD) and xylulokinase (XK) genes integrated at each of its multiple reiterated ribosomal DNA sites; (b) multiple copies of exogenous DNA, including XR, XD, and XK genes, fused to non-glucose inhibited promoters integrated into its chromosomal DNA, where the **yeast** simultaneously ferments glucose and xylose to ethanol; or (c) multiple copies of an introduced DNA containing XR, XD and XK genes, where the **yeast** ferments xylose to ethanol; the yeasts of (b) and (c) retain their capacity for fermenting xylose to ethanol when cultured under non-selective conditions for at least 20 generations. The **yeast** is produced by integrating multiple copies of exogenous DNA into reiterated chromosomal DNA of cells. The **yeast** produced by the integration method, even upon culture in non-selective medium for multiple generations (e.g. up to 20), retain their full capability to ferment **xylose** to ethanol.

ACCESSION NUMBER: AAV12824 DNA DGENE
 TITLE: **Yeast** which ferments xylose to methanol - comprising xylitol reductase, xylitol dehydrogenase and xylulokinase genes integrated at each of its multiple reiterated ribosomal DNA sites
 INVENTOR: Chen Z; Ho N W Y
 PATENT ASSIGNEE: (PURD) PURDUE RES FOUND.
 PATENT INFO: WO 9742307 A1 19971113 66p
 APPLICATION INFO: WO 1997-US7663 19970506
 PRIORITY INFO: US 1996-16865 19960506
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 OTHER SOURCE: 1997-558974 [51]

L5 ANSWER 3 OF 3 DGENE (C) 2002 THOMSON DERWENT
 TI **Yeast** which ferments xylose to methanol - comprising xylitol reductase, xylitol dehydrogenase and xylulokinase genes integrated at each of its multiple reiterated ribosomal DNA sites
 AN AAV12825 DNA DGENE

AB This sequence represents an amplification primer for the **yeast** 5S **rDNA** sequence. The amplified sequence can be used in the **yeast** of the invention, which ferments xylose to ethanol. The **yeast** comprises: (a) xylose reductase (XR), xylitol dehydrogenase (XD) and xylulokinase (XK) genes integrated at each of its multiple reiterated ribosomal DNA sites; (b) multiple copies of exogenous DNA, including XR, XD, and XK genes, fused to non-glucose inhibited promoters integrated into its chromosomal DNA, where the **yeast** simultaneously ferments glucose and xylose to ethanol; or (c) multiple copies of an introduced DNA containing XR, XD and XK genes, where the **yeast** ferments xylose to ethanol; the yeasts of (b) and (c) retain their capacity for fermenting xylose to ethanol when cultured under non-selective conditions for at least 20 generations. The **yeast** is produced by integrating multiple copies of exogenous DNA into reiterated chromosomal DNA of cells. The **yeast** produced by the integration method, even upon culture in non-selective medium for multiple generations (e.g. up to 20), retain their full capability to ferment xylose to ethanol.

ACCESSION NUMBER: AAV12825 DNA DGENE

TITLE: **Yeast** which ferments xylose to methanol - comprising xylitol reductase, xylitol dehydrogenase and xylulokinase genes integrated at each of its multiple reiterated ribosomal DNA sites

INVENTOR: Chen Z; Ho N W Y

PATENT ASSIGNEE: (PURD)PURDUE RES FOUND.

PATENT INFO: WO 9742307 A1 19971113

66p

APPLICATION INFO: WO 1997-US7663 19970506

PRIORITY INFO: US 1996-16865 19960506

DOCUMENT TYPE: Patent

LANGUAGE: English

OTHER SOURCE: 1997-558974 [51]

=> d his

(FILE 'HOME' ENTERED AT 18:34:53 ON 15 JUL 2002)

FILE 'MEDLINE, USPATFULL, DGENE, EMBASE, WPIDS, BIOSIS' ENTERED AT 18:35:16 ON 15 JUL 2002

L1 81 S YEAST AND FERMENT XYLOSE
L2 99 S YEAST AND FERMENT GLUCOSE
L3 190017 S SACCHAROMYCES
L4 10 S L1 AND L2
L5 3 S L1 AND RDNA

=> d 14 ti abs ibib tot

L4 ANSWER 1 OF 10 USPATFULL
TI Single zymomonas mobilis strain for xylose and arabinose fermentation
AB This invention relates to single microorganisms which normally do not ferment pentose sugars which are genetically altered to ferment the pentose sugars, xylose and arabinose, to produce ethanol, and a fermentation process utilizing the same. Examples include Zymomonas mobilis which has been transformed with a combination of E. coli genes for xylose isomerase, xylulokinase, L-arabinose isomerase, L-ribulokinase, L-ribulose 5-phosphate 4-epimerase, transaldolase and transketolase. Expression of added genes are under the control of Z. mobilis promoters. These newly created microorganisms are useful for fermenting glucose, xylose and arabinose, produced by hydrolysis of hemicellulose and cellulose or starch, to produce ethanol.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 1998:150771 USPATFULL
TITLE: Single zymomonas mobilis strain for xylose and
abinose fermentation
INVENTOR(S): Zhang, Min, Lakewood, CO, United States
Chou, Yat-Chen, Wheat Ridge, CO, United States
Picataggio, Stephen K., Landenberg, PA, United States
Finkelstein, Mark, Fort Collins, CO, United States
PATENT ASSIGNEE(S): Midwest Research Institute, Kansas City, MI, United
States (U.S. corporation)

| NUMBER | KIND | DATE |
|---|------|--------------|
| US 5843760 | | 19981201 |
| US 1997-851767 | | 19970506 (8) |
| Continuation-in-part of Ser. No. US 1995-421996, filed
on 14 Apr 1995, now patented, Pat. No. US 5726053 | | |
| which | | |
| is a continuation-in-part of Ser. No. US 1994-228303,
filed on 15 Apr 1994, now patented, Pat. No. US | | |

5514583

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Prouty, Rebecca E.
LEGAL REPRESENTATIVE: Richardson, Ken
NUMBER OF CLAIMS: 10
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 6 Drawing Figure(s); 3 Drawing Page(s)
LINE COUNT: 612
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 2 OF 10 USPATFULL
TI Recombinant lactobacillus for fermentation of xylose to lactic acid and
lactate
AB A recombinant Lactobacillus MONT4 is provided which has been
genetically
engineered with xylose isomerase and xylulokinase genes from
Lactobacillus pentosus to impart to the Lactobacillus MONT4 the ability
to ferment lignocellulosic biomass containing xylose to lactic acid.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 1998:101528 USPATFULL
TITLE: Recombinant lactobacillus for fermentation of xylose
to
INVENTOR(S): lactic acid and lactate
Picataggio, Stephen K., Golden, CO, United States
Zhang, Min, Lakewood, CO, United States
Franden, Mary Ann, Littleton, CO, United States
Mc Millan, James D., Boulder, CO, United States
Finkelstein, Mark, Fort Collins, CO, United States
PATENT ASSIGNEE(S): Midwest Research Institute, Kansas City, MI, United
States (U.S. corporation)

| NUMBER | KIND | DATE |
|-----------------------|--|--------------|
| US 5798237 | | 19980825 |
| US 1995-541632 | | 19951010 (8) |
| ----- | | |
| DOCUMENT TYPE: | Utility | |
| FILE SEGMENT: | Granted | |
| PRIMARY EXAMINER: | Elliott, George C. | |
| ASSISTANT EXAMINER: | Wang, Andrew | |
| LEGAL REPRESENTATIVE: | O'Connor, Edna M., Richardson, Ken, Eure, Ruth | |
| NUMBER OF CLAIMS: | 12 | |
| EXEMPLARY CLAIM: | 1 | |
| NUMBER OF DRAWINGS: | 4 Drawing Figure(s); 4 Drawing Page(s) | |

LINE COUNT: 717
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 3 OF 10 USPATFULL
TI Recombinant yeasts for effective fermentation of glucose and xylose
AB Described are recombinant yeasts containing genes encoding xylose reductase, xylitol dehydrogenase and xylulokinase, and DNA molecules, vectors and methods useful for producing such yeasts. The recombinant yeasts effectively ferment xylose to ethanol, and preferred yeasts are capable of simultaneously fermenting glucose and xylose to ethanol thereby taking full advantage of these two sugar sources as they are found in agricultural biomass.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 1998:91839 USPATFULL
TITLE: Recombinant yeasts for effective fermentation of glucose and xylose
INVENTOR(S): Ho, Nancy W. Y., West Lafayette, IN, United States
Tsao, George T., West Lafayette, IN, United States
PATENT ASSIGNEE(S): Purdue Research Foundation, West Lafayette, IN, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|-----------------------|--|------|--------------|
| PATENT INFORMATION: | US 5789210 | | 19980804 |
| APPLICATION INFO.: | US 1993-148581 | | 19931108 (8) |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | Granted | | |
| PRIMARY EXAMINER: | Guzo, David | | |
| LEGAL REPRESENTATIVE: | Woodard, Emhardt, Naughton Moriarty & McNett | | |
| NUMBER OF CLAIMS: | 20 | | |
| EXEMPLARY CLAIM: | 13 | | |
| NUMBER OF DRAWINGS: | 18 Drawing Figure(s); 18 Drawing Page(s) | | |
| LINE COUNT: | 1046 | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 4 OF 10 USPATFULL
TI Recombinant Zymomonas for pentose fermentation
AB The invention relates to microorganisms which normally do not ferment pentose sugar and which are genetically altered to ferment pentose sugar to produce ethanol, and fermentation processes utilizing the same. Examples include Zymomonas mobilis which has been transformed with combinations of E. coli genes for xylose isomerase, xylulokinase, transaldolase, transketolase, L-arabinose isomerase, L-ribulokinase, and L-ribulose-5-phosphate 4-epimerase. Expression of the added genes are under the control of Zymomonas mobilis promoters. These newly created microorganisms are useful for fermenting pentoses and glucose, produced by hydrolysis of hemicellulose and cellulose, to produce ethanol.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 1998:25113 USPATFULL
TITLE: Recombinant Zymomonas for pentose fermentation
INVENTOR(S): Picataggio, Stephen K., Golden, CO, United States
Zhang, Min, Lakewood, CO, United States
Eddy, Christina K., Saratoga Springs, NY, United States
PATENT ASSIGNEE(S): Deanda, Kristine A., Conifer, CO, United States
Midwest Research Institute, Kansas City, MO, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|--|--------|------|------|
|--|--------|------|------|

PATENT INFORMATION: US 5726053 19980310
APPLICATION INFO.: US 1995-421996 19950414 (8)
RELATED APPLN. INFO.: Continuation-in-part of Ser. No. [REDACTED] 1994-228303, filed on 15 Apr 1994, now patented, Pat. No. US 5514583

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Prouty, Rebecca E.
LEGAL REPRESENTATIVE: O'Connor, Edna M., Richardson, Ken, Eure, Ruth
NUMBER OF CLAIMS: 12
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 7 Drawing Figure(s); 7 Drawing Page(s)
LINE COUNT: 1232
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 5 OF 10 USPATFULL
TI Pentose fermentation by recombinant zymomonas
AB The invention relates to microorganisms which normally do not ferment pentose sugar and which are genetically altered to ferment pentose sugar to produce ethanol, and fermentation processes utilizing the same. Examples include Zymomonas mobilis which has been transformed with combinations of E. coli genes for xylose isomerase, xylulokinase, transaldolase, transketolase, L-arabinose isomerase, L-ribulokinase, and L-ribulose 5-phosphate 4-epimerase. Expression of the added genes are under the control of Zymomonas mobilis promoters. These newly created microorganisms are useful for fermenting pentoses and glucose, produced by hydrolysis of hemicellulose and cellulose, to produce ethanol.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
ACCESSION NUMBER: 1998:9364 USPATFULL
TITLE: Pentose fermentation by recombinant zymomonas
INVENTOR(S): Picataggio, Stephen K., Golden, CO, United States
Zhang, Min, Lakewood, CO, United States
Eddy, Christina K., Saratoga Springs, NY, United States
States Deanda, Kristine A., Conifer, CO, United States
Finkelstein, Mark, Fort Collins, CO, United States
Mohagheghi, Ali, Northglenn, CO, United States
Newman, Mildred M., Littleton, CO, United States
McMillan, James D., Boulder, CO, United States
Midwest Research Institute, Kansas City, MO, United States (U.S. corporation)

| NUMBER | KIND | DATE |
|--|------|--------------|
| US 5712133 | | 19980127 |
| US 1995-422424 | | 19950414 (8) |
| Continuation-in-part of Ser. No. US 1994-228303, filed on 15 Apr 1994, now patented, Pat. No. US 5514583 | | |

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Prouty, Rebecca E.
LEGAL REPRESENTATIVE: O'Connor, Edna M., Richardson, Ken, Eure, Ruth
NUMBER OF CLAIMS: 10
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 7 Drawing Figure(s); 7 Drawing Page(s)
LINE COUNT: 1244
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 6 OF 10 USPATFULL
TI Recombinant zymomonas for pentose fermentation
AB The invention relates to microorganisms which normally do not ferment a pentose sugar and which are genetically altered to ferment this pentose

to produce ethanol. A representative example is Zymomonas mobilis which has been transformed with E. coli xylose isomerase, xylulokinase, transaldolase and transketolase genes. Expression of the added genes

are

under the control of Zymomonas mobilis promoters. This newly created microorganism is useful for fermenting pentoses and glucose, produced by hydrolysis of hemicellulose and cellulose, to produce ethanol.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 96:38807 USPATFULL

TITLE: Recombinant zymomonas for pentose fermentation

INVENTOR(S): Picataggio, Stephen K., Golden, CO, United States

Zhang, Min, Lakewood, CO, United States

Eddy, Christina K., Littleton, CO, United States

Deanda, Kristine A., Lakewood, CO, United States

Finkelstein, Mark, Fort Collins, CO, United States

PATENT ASSIGNEE(S): Midwest Research Institute, Kansas City, MO, United States (U.S. corporation)

| NUMBER | KIND | DATE |
|--------|------|------|
|--------|------|------|

| | | |
|---------------------|------------|----------|
| PATENT INFORMATION: | US 5514583 | 19960507 |
|---------------------|------------|----------|

| | | |
|--------------------|----------------|--------------|
| APPLICATION INFO.: | US 1994-228303 | 19940415 (8) |
|--------------------|----------------|--------------|

| | |
|----------------|---------|
| DOCUMENT TYPE: | Utility |
|----------------|---------|

| | |
|---------------|---------|
| FILE SEGMENT: | Granted |
|---------------|---------|

| | |
|-------------------|----------------|
| PRIMARY EXAMINER: | Wax, Robert A. |
|-------------------|----------------|

| | |
|---------------------|-----------------|
| ASSISTANT EXAMINER: | Prouty, Rebecca |
|---------------------|-----------------|

| | |
|-----------------------|-------------------------------|
| LEGAL REPRESENTATIVE: | O'Connor, Edna M., Eure, Ruth |
|-----------------------|-------------------------------|

| | |
|-------------------|---|
| NUMBER OF CLAIMS: | 9 |
|-------------------|---|

| | |
|------------------|---|
| EXEMPLARY CLAIM: | 1 |
|------------------|---|

| | |
|---------------------|--|
| NUMBER OF DRAWINGS: | 2 Drawing Figure(s); 2 Drawing Page(s) |
|---------------------|--|

| | |
|-------------|-----|
| LINE COUNT: | 741 |
|-------------|-----|

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 7 OF 10 USPATFULL

TI Method of producing products with a bilayer pellet containing a coimmobilized enzyme system that maintains a pH difference

AB A method of providing and sustaining a difference in pH of a first reaction of an immobilized enzyme and a second reaction in a bulk liquid

surrounding the immobilized enzyme is carried out with a bilayer pellet containing coimmobilized enzymes. The pellet can contain an enzyme that produces a desired product immobilized in an inner core and urease immobilized in an outer layer. The bulk liquid contains urea and a substrate for the enzyme in the core, and has an acidic pH. The urease reacts with urea diffusing into the outer layer from the bulk liquid to produce ammonia. The ammonia consumes hydrogen ions diffusing into the inner core from the acidic bulk liquid. This provides the enzyme in the inner core with a pH higher than the acidic pH of the bulk liquid suitable for the enzyme to react with the substrate as it diffuses into the inner core. In a preferred embodiment, simultaneous isomerization

of

xylose to xylulose and fermentation of xylulose to ethanol is carried out with a bilayer pellet containing xylose isomerase in the core and yeast in the bulk liquid. The isomerization occurs at an optimum pH of 7.0 to 8.0 and the fermentation occurs at an optimum pH of 4.0 to 5.0.

ACCESSION NUMBER: 95:22822 USPATFULL

TITLE: Method of producing products with a bilayer pellet containing a coimmobilized enzyme system that maintains a pH difference

maintains

INVENTOR(S): Fournier, Ronald L., Sylvania, OH, United States
 Varanasi, Sasidhar, Toledo, OH, United States
 Powers, James P., Toledo, OH, United States
 University of Toledo, Toledo, OH, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|-----------------------|--|------|--------------|
| PATENT INFORMATION: | US 5397700 | | 19950314 |
| APPLICATION INFO.: | US 1993-125546 | | 19930923 (8) |
| DISCLAIMER DATE: | 20101019 | | |
| RELATED APPLN. INFO.: | Continuation-in-part of Ser. No. US 1991-785938, filed on 31 Oct 1991, now patented, Pat. No. US 5254468 | | |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | Granted | | |
| PRIMARY EXAMINER: | Naff, David M. | | |
| LEGAL REPRESENTATIVE: | Marshall & Melhorn | | |
| NUMBER OF CLAIMS: | 2 | | |
| EXEMPLARY CLAIM: | 1 | | |
| NUMBER OF DRAWINGS: | 3 Drawing Figure(s); 2 Drawing Page(s) | | |
| LINE COUNT: | 624 | | |

L4 ANSWER 8 OF 10 USPATFULL
 TI Combined enzyme mediated fermentation of cellulosic and xylose to ethanol
 by *Schizosaccharoyces pombe*, cellulase, β -glucosidase, and xylose isomerase
 AB A process for producing ethanol from mixed sugar streams from pretreated biomass comprising xylose and cellulose using enzymes to convert these substrates to fermentable sugars; selecting and isolating a *yeast Schizosaccharomyces pombe* ATCC No. 2476, having the ability to ferment these sugars as they are being formed to produce ethanol; loading the substrates with the fermentation mix composed of *yeast*, enzymes and substrates; fermenting the loaded substrates and enzymes under anaerobic conditions at a pH range of between about 5.0 to about 6.0 and at a temperature range of between about 35.degree. C. to about 40.degree. C. until the fermentation is completed, the xylose being isomerized to xylulose, the cellulose being converted to glucose, and these sugars being concurrently converted to ethanol by *yeast* through means of the anaerobic fermentation; and recovering the ethanol.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 94:108862 USPATFULL
 TITLE: Combined enzyme mediated fermentation of cellulosic and xylose to ethanol by *Schizosaccharoyces pombe*, cellulase, β -glucosidase, and xylose isomerase
 INVENTOR(S): Lastick, Stanley M., Longmont, CO, United States
 Mohagheghi, Ali, Northglenn, CO, United States
 Tucker, Melvin P., Lakewood, CO, United States
 Grohmann, Karel, Winter Haven, FL, United States
 PATENT ASSIGNEE(S): The United States of America as represented by the United States Department of Energy, Washington, DC, United States (U.S. government)

| | NUMBER | KIND | DATE |
|-----------------------|--|------|--------------|
| PATENT INFORMATION: | US 5372939 | | 19941213 |
| APPLICATION INFO.: | US 1993-28592 | | 19930308 (8) |
| RELATED APPLN. INFO.: | Continuation of Ser. No. US 1991-672984, filed on 21 Mar 1991, now abandoned | | |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | Granted | | |

PRIMARY EXAMINER: Knode, Marian
LEGAL REPRESENTATIVE: Richardson, Kenneth, Anderson, Thomas G., Moser,
William R.
NUMBER OF CLAIMS: 4
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Figure(s); 1 Drawing Page(s)
LINE COUNT: 227
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 9 OF 10 USPATFULL
TI Bilayer pellet containing immobilized xylose isomerase and urease for the simultaneous isomerization and fermentation of xylose to ethanol
AB A bilayered immobilized enzyme pellet and a process to manufacture this pellet are provided for use in a process involving the simultaneous isomerization of xylose to xylulose and fermentation of xylulose to ethanol. The bilayered pellet is able to maintain the environment where the isomerization reaction occurs within its optimum pH of 7.0 to 8.0 while the fermentation reaction occurs within its optimum pH range of 4.0 to 5.0. This process allows both xylose and glucose sugars to be effectively used as a feedstock for ethanol production by isomerizing the xylose to xylulose and then making the xylulose immediately available for the fermentation process. Because the xylose has been converted to its ketose isomer, xylulose, yeasts which can ferment glucose and xylulose can be used in this process.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 93:87255 USPATFULL
TITLE: Bilayer pellet containing immobilized xylose isomerase and urease for the simultaneous isomerization and fermentation of xylose to ethanol
INVENTOR(S): Fournier, Ronald L., Toledo, OH, United States
Varanasi, Sasidhar, Toledo, OH, United States
Byers, James P., Toledo, OH, United States
PATENT ASSIGNEE(S): The University of Toledo, Toledo, OH, United States
(U.S. corporation)

| | NUMBER | KIND | DATE |
|-----------------------|--|------|--------------|
| PATENT INFORMATION: | US 5254468 | | 19931019 |
| APPLICATION INFO.: | US 1991-785938 | | 19911031 (7) |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | Granted | | |
| PRIMARY EXAMINER: | Naff, David M. | | |
| LEGAL REPRESENTATIVE: | Marshall & Melhorn | | |
| NUMBER OF CLAIMS: | 7 | | |
| EXEMPLARY CLAIM: | 1 | | |
| NUMBER OF DRAWINGS: | 2 Drawing Figure(s); 2 Drawing Page(s) | | |
| LINE COUNT: | 513 | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 10 OF 10 USPATFULL
TI Simultaneous saccharification and fermentation (SSF) using cellobiose fermenting yeast Brettanomyces custersii
AB A process for producing ethanol from plant biomass includes forming a substrate from the biomass with the substrate including hydrolysates of cellulose and hemicellulose. A species of the yeast Brettanomyces custersii (CBS 5512), which has the ability to ferment both cellobiose and glucose to ethanol, is then selected and isolated. The substrate is inoculated with this yeast, and the inoculated substrate is then fermented under conditions favorable for cell viability and conversion of hydrolysates to ethanol.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 92:25254 USPATFULL
TITLE: Simultaneous saccharification and fermentation (SSF)
using cellobiose fermenting yeas
Brettanomyces custersii
INVENTOR(S): Spindler, Diane D., Indian Hills, CO, United States
Grohmann, Karel, Littleton, CO, United States
Wyman, Charles E., Lakewood, CO, United States
PATENT ASSIGNEE(S): The United States of America as represented by the
United States Department of Energy, Washington, DC,
United States (U.S. government)

| NUMBER | KIND | DATE |
|--|---|--------------|
| US 5100791 | | 19920331 |
| US 1991-642268 | | 19910116 (7) |
| ----- | | |
| DOCUMENT TYPE: | Utility | |
| FILE SEGMENT: | Granted | |
| PRIMARY EXAMINER: | Lilling, Herbert J. | |
| LEGAL REPRESENTATIVE: | Richardson, Kenneth, Weinberger, James W., Moser,
William R. | |
| NUMBER OF CLAIMS: | 18 | |
| EXEMPLARY CLAIM: | 1 | |
| NUMBER OF DRAWINGS: | 2 Drawing Figure(s); 2 Drawing Page(s) | |
| LINE COUNT: | 393 | |
| CAS INDEXING IS AVAILABLE FOR THIS PATENT. | | |

=> d his

(FILE 'HOME' ENTERED AT 18:34:53 ON 15 JUL 2002)

FILE 'MEDLINE, USPATFULL, DGENE, EMBASE, WPIDS, BIOSIS' ENTERED AT
18:35:16 ON 15 JUL 2002

L1 81 S YEAST AND FERMENT XYLOSE
L2 99 S YEAST AND FERMENT GLUCOSE
L3 190017 S SACCHAROMYCES
L4 10 S L1 AND L2
L5 3 S L1 AND RDNA

=> s 14 and ethanol

L6 10 L4 AND ETHANOL

=> s 16 and non-glucose inhibited promoters

L7 1 L6 AND NON-GLUCOSE INHIBITED PROMOTERS

=> d 17 ti abs ibib tot

L7 ANSWER 1 OF 1 USPATFULL
TI Recombinant yeasts for effective fermentation of glucose and xylose
AB Described are recombinant yeasts containing genes encoding xylose
reductase, xylitol dehydrogenase and xylulokinase, and DNA molecules,
vectors and methods useful for producing such yeasts. The recombinant
yeasts effectively ferment xylose to ethanol
, and preferred yeasts are capable of simultaneously fermenting glucose
and xylose to ethanol thereby taking full advantage of these
two sugar sources as they are found in agricultural biomass.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 1998:91839 USPATFULL

TITLE: Recombinant yeasts for effective fermentation of

INVENTOR(S): glucose and xylose
Do, Nancy W. Y., West Lafayette, IN, United States
Bao, George T., West Lafayette, [REDACTED], United States
Purdue Research Foundation, West Lafayette, IN, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|--|--|------|--------------|
| PATENT INFORMATION: | US 5789210 | | 19980804 |
| APPLICATION INFO.: | US 1993-148581 | | 19931108 (8) |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | Granted | | |
| PRIMARY EXAMINER: | Guzo, David | | |
| LEGAL REPRESENTATIVE: | Woodard, Emhardt, Naughton Moriarty & McNett | | |
| NUMBER OF CLAIMS: | 20 | | |
| EXEMPLARY CLAIM: | 13 | | |
| NUMBER OF DRAWINGS: | 18 Drawing Figure(s); 18 Drawing Page(s) | | |
| LINE COUNT: | 1046 | | |
| CAS INDEXING IS AVAILABLE FOR THIS PATENT. | | | |